

Claims

1. A method for producing a radical polymer, characterized in that the method comprises feeding a radical polymerization initiator and a radical-polymerizable monomer into a reaction tube having an inner diameter of 2 mm or less and performing polymerization in the reaction tube in a homogeneous liquid state under flow conditions.

2. A method for producing a radical polymer according to claim 1, wherein the radical polymerization initiator and the radical-polymerizable monomer are mixed before being fed into the reaction tube, and the mixture is fed to the reaction tube.

3. A method for producing a radical polymer according to claim 1 or 2, wherein the reaction tube has an inner diameter of 1 mm or less.

4. A method for producing a radical polymer according to any of claims 1 to 3, wherein the reaction tube has a plurality of reaction zones capable of regulating polymerization temperature, and the reaction zones are regulated in terms of temperature, whereby the molecular weight distribution of the formed polymer is controlled.

5. A method for producing a radical polymer according to claim 4, wherein the reaction tube has a first reaction zone located on a radical polymerization initiator and radical-polymerizable monomer inlet side, and a second reaction zone located on a polymer liquid outlet side; the

first reaction zone is maintained at a temperature at which the radical polymerization initiator decomposes; and the second reaction zone is maintained at a temperature at which virtually no decomposition of the radical polymerization initiator occurs within the time during which the initiator passes through the second reaction zone.

6. A microreactor comprising a jacket for allowing a temperature-regulating fluid to pass therethrough, and a plurality of round tubes which are arranged in parallel in the jacket, each having have an inner diameter of 2 mm or less, wherein reaction temperature in the round tubes can be regulated through controlling flow of the temperature-regulating fluid in the jacket.

7. A microreactor according to claim 6, which has such a structure that the jacket is divided into a plurality of jacket sections in the longitudinal direction of the round tubes, and the flow of temperature-regulating liquid in each jacket section can be controlled independently.

8. A microreactor according to claim 6 or 7, wherein the round tubes are detachably attached to a main body of the jacket.